AMENDMENTS TO THE CLAIMS

Kindly amend the claims as follows:

Cancel claims 2-6, 12-14, 16, 18-20, 26-32, 34, 41, 43, 45, 47, 53, 56, 58, 64-81 (all pending claims).

Kindly add the following new claims:

82. (new): A micro-array evanescent wave fluorescence detection device for detecting the presence of target substances in test samples comprising:

a polymer waveguide core layer;

a polymer waveguide cladding layer in contact with said core layer, said cladding layer containing a plurality of nanowells for holding said test samples;

a plurality of micro-fluidic channels in communication with said nanowells, said micro-fluidic channels conveying fluid samples to said nanowells;

a plurality of optically sensitive fluorescent tags bound to target molecules in said nanowells;

a light source optically coupled to said core layer, said light source creating an evanescent wave in said cladding layer, said evanescent wave causing said fluorescent tags to emit detectable light from said target molecules.

83. (new): The micro-array evanescent wave fluorescence detection device of claim 82 further comprising polymer linkage groups built into said nanowells, said polymer linkage groups providing attachment of desired capture molecules in said nanowells.

84. (new): The micro-array evanescent wave fluorescence detection device of claim 82 wherein said polymer waveguide core layer and said polymer waveguide cladding layer comprises polymer sheets.

85. (new): The micro-array evanescent wave fluorescence detection device of claim 84 wherein said polymer sheets are formed into film strips.

86. (new): The micro-array evanescent wave fluorescence detection device of claim 85 wherein said film strips comprise width of 8mm, 16mm or 32mm film.

87. (new): The micro-array evanescent wave fluorescence detection device of claim 86 wherein said film is rolled.

88. (new): The micro-array evanescent wave fluorescence detection device of claim 82 further comprising an intermediate protective cladding layer located between said polymer waveguide core and said waveguide cladding layer.

89. (new): The micro-array evanescent wave fluorescence detection device of claim 88 wherein said intermediate protective cladding layer contains a plurality of attachment binding sites.

90. A laminar biosensor comprising:

a top outer layer containing at least one fluid port;

a fluidics layer below said top outer layer containing at least one fluidics channel in fluid communication with said fluid port;

a first cladding layer below said fluidics layer containing at least one micro-cuvette in fluid communication with said fluidics channel;

a waveguide core layer containing at least one channel waveguide core in contact with said micro-cuvette;

a second cladding layer below said waveguide core layer in contact with said waveguide core;

an excitation light source optically coupled into said waveguide core layer;

whereby, fluid containing samples and optical tags placed in said fluid port is transferred by said fluidics channel into said micro-cuvette where light from said excitation light source enters said micro-cuvette by means of an evanescent wave in said first

cladding layer exciting any of said optical tags binding to target molecules in said micro-cuvette.

91. (new): The laminar biosensor of claim 90 further comprising a plurality of micro-cuvettes in said first cladding layer.

92. (new): The laminar biosensor of claim 90 further comprising a plurality of channel waveguide cores in said waveguide core layer.

93. (new): The laminar biosensor of claim 90 further comprising a bottom supporting layer below said second cladding layer.

94. (new): The laminar biosensor of claim 93 wherein said bottom supporting layer is optically transparent to light produced by said optical tags.

95. (new): A micro-array evanescent wave detection device for detecting the presence of target substances in test samples comprising:

a polymer waveguide core layer;

a polymer waveguide cladding layer in contact with said core layer, said cladding layer containing a plurality of nanowells for holding said test samples;

a plurality of optically sensitive tags bound to target molecules in said nanowells;

a light source optically coupled to said core layer, said light source creating an evanescent wave in said cladding layer, said evanescent wave causing said optically sensitive tags to emit detectable light from said target molecules.

95. (new): The micro-array evanescent wave detection device of claim 94 further comprising polymer linkage groups built into said nanowells, said polymer linkage groups providing attachment of desired capture molecules in said nanowells.

96. (new): The micro-array evanescent wave detection device of claim 94 wherein said polymer waveguide core layer and

said polymer waveguide cladding layer comprises polymer sheets.

97. (new): The micro-array evanescent wave detection device of claim 94 wherein said polymer sheets are formed into film strips.

98. (new): The micro-array evanescent wave detection device of claim 97 wherein said film strips comprise width of 8mm, 16mm or 32mm film.

99. (new): The micro-array evanescent wave detection device of claim 98 wherein said film is rolled.

100. (new): The micro-array evanescent wave detection device of claim 94 further comprising an intermediate protective cladding layer located between said polymer waveguide core and said waveguide cladding layer.